## REMARKS/ARGUMENTS

The examiner argued that the claim feature of "comparing a contribution of one instrumental part" is not consistent with the specification which describes comparing "the contribution of an input function." We disagree. It is clear from the specification that the input function to which the examiner directs our attention represents an instrumental part.

Fig. 1 shows the software that generates a pitched musical part from a plurality of input parts which the specification also refers to as "music streams" and/or "pitched parts." The specification says the following about pitched parts:

> "Play-along" musical parts are of two kinds: "pitched", and "non-pitched". A pitched part is a musical part that may be played on an instrument that can be used to play melodies. Examples of such instruments include a piano, a guitar, a trumpet, or a violin. A non-pitched part is a musical part that may be played on drums, such as a multi-instrument drum kit, bongos, or various percussive instruments that are rarely used to play melodies. (Page 15, lines 14-21).

Each of the pitched parts is processed by a corresponding different evaluator of a set of evaluators ($E_0$ to $E_n$) (see Fig. 1 and associated description). From the pitched part that it receives, the evaluator generates a measurement stream. So, each measurement stream represents a corresponding pitched part or instrumental part.

A merger object 22 then combines the multiple measurement streams to form a composite measurement stream 24. In essence, merger object 22 makes the multiple measurement steams appear as one measurement stream (page 12, lines 6-7).

Then chooser 26 converts composite measurement stream 24 into a single measurement stream 28 that controls switcher 30.

> In operation, chooser 26 receives a composite measurement stream 24 (several functions of SCF-time) and outputs a stream 28 that identifies which component of the input stream has the highest value at any point in time. (Page 20, lines 3-6).

According to the specification:

> Each component stream of measurement stream 24, which is input to chooser 26, includes measurement events that happen at specific times. As mentioned above, a measurement stream is an expression of a stepwise function of SCF-time. These components of measurement stream 24 (namely, streams 20) can thus be thought of as "input functions". (Page 21, lines 5-10).

In other words, composite measurement stream 24 is made up of input functions, each of which represents a corresponding pitched part or instrumental part. So, for this reason we submit that the phrase "contribution of one instrumental part" is not inconsistent with the phrase "contribution of an input function" to which the examiner directs our attention in the specification.

The examiner also said that he did not understand the meaning of "cost of switching," as recited in claim 1. Again we believe that this concept is sufficiently elaborated in the specification and for that reason a person of ordinary skill in the art would understand its meaning.

The explanation of this concept is starts on page 20 of the specification and proceeds through page 26:

> To avoid such unnecessary interruptions of otherwise cohesive sections of music, chooser 26 can be made to adopt a "longer term perspective" on its input stream 24. That is, chooser 26 can be prevented from making short-term diversions from a particular musical part. This is achieved using a process that is analogous to economic forecasting and by attributing a cost to the action of switching from one input stream to another. In order to be justified, switching streams must provide what might be called, metaphorically, an appropriate return on investment. The chooser can look arbitrarily far into the future of SCF-time with full knowledge in order to decide what to do in the present. This is done as follows. (Page 20, line 14+).

After that passage the specification describes a specific example in which the "cost of switching" is set equal to 10. During that description, the specification states:

> The switch cost of a chooser is an amount that indicates how undesirable it is for the chooser to change its choice from one input function to another. The units for measuring switch cost are the same as the units for measuring the contribution of a function, i.e., value multiplied by SCF-duration. (Page 22, lines 6-11).

In other words, one way to view the "cost of switching" is as a penalty that is associated with switching from one instrumental part to another. The penalty is designed to reduce the number of occasions on which switching will occur. Stated differently, the penalty serves to limit switching from one instrumental part to another to only those occasions when the contribution computed for the new part exceeds the contribution computed for the old part by a sufficient amount.

The examiner rejected claims 1-3, 5-9, 12, 26-27, 30-34, 37, 51-52, 55-59, and 62 under 35 U.S.C. §102(e) as anticipated by U.S. 6,201,176 to Yourlo.

The examiner argued that Yourlo discloses all elements of claim 1 including "a (cost of switching) feature-comparison step wherein a control stream is generated based on how desirable one instrumental part is in comparison to another instrumental part." And in support of this assertion, the examiner directs our attention to column 5, lines 1-10 as well as to Fig. 3.

But upon examining the cited passage and Fig. 3, we find that neither supports the examiner's position. Yourlo simply describes a database query process, i.e., a process during which features associated with the user query are compared to features of pieces of music stored in the music database. There is no concept of a "cost of switching" mentioned anywhere in the passage to which the examiner refers, either explicitly or implicitly. Indeed, there is no switching that takes place; it is simply a query process by which the best match is found on the basis of a feature comparison between the features associated with the query and the features associated with each of the stored musical pieces.

The examiner also contends that applicants' intended meaning of "cost of switching" is directed towards determining which instrumental part is more desirable. That is actually contrary to what the specification says. The purpose of using a cost of switching is to prevent jumping back and forth between parts simply because one part happens to appear to be "better" than another at any given time period. The purpose of including a cost of switching is to, in effect, require that the benefit of one part over another be sufficient to justify switching from one part to another. (See discussion above)

For at least these reasons, we submit that independent claims 1, 26, and 51 and all claims dependent therefrom should be allowed over Yourlo.

The examiner rejected claims 13-20, 24-25, 38-45, 49-50, 63-70, and 74-75 under 35 U.S.C. §103(a) as being unpatentable over U.S. 6,294,720 to Aoki in view of U.S. 6,121,533 to Kay.

The examiner admits that Aoki does not teach that patterns having relatively low frequencies are combined to produce the musical part before patterns having relatively high frequencies are combined. For this missing feature, the examiner relies on Kay and directs our attention to Col. 18, line 63 to Col. 19, line 14, which states as follows:

> An assignable pattern controls any other parameter of a tone generation module. In this example, MIDI controller 17 values are derived, which may be assigned to control a tone module's resonant filter frequency cutoff parameter, with each derived value indicating a position from low to high cutoff, with 0 being low and 127 being high. Duplicate values in succession may be filtered on output. An example of derived values

> from an assignable pattern may take the form {0, 32, 64, 96, 127}, which would cause notes to change from low cutoff to high cutoff as they are generated. Although MIDI controller values are employed in this example and throughout these explanations, assignable data can refer to any type of data that may be either sent to a tone module via MIDI or that may be used internally to control some aspect of a tone module's sound generation capabilities. Although a single assignable pattern is employed in this example and throughout these explanations, multiple assignable patterns controlling different aspects of a tone module in real-time can also be utilized.

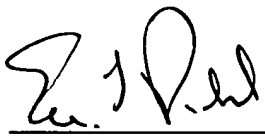
We can find nothing in that passage (or in any other passage within the Kay reference, for that matter) that discusses the concept recited in claims 13, 38, and 63. That passage simply discusses controlling the cutoff as notes are generated. And for that purpose it describes an assignable pattern that has a parameter that specifies the frequency cutoff for the notes that are to be generated. It does not even relate to selectively combining multiple patterns, let alone suggest the approach of combining patterns of relatively low frequency before patterns of relatively high frequency.

For the reasons stated above, we believe that the claims are allowable and therefore ask the Examiner to allow them to issue.

Please apply any charges not covered, or any credits, to Deposit Account No. 08-0219.

Respectfully submitted,

Date: September 15, 2004



Eric L. Prahl
Reg. No. 32,590

Wilmer Cutler Pickering Hale and Dorr LLP
60 State Street
Boston, MA 02109
Telephone: (617) 526-6000
Facsimile: (617) 526-5000